



Belt Drive Fluid Coolers Model BFF

Specification Data

Belt Drive Fluid Coolers



Multiple fans, carefully matched to the coil surface cover a large percentage of the face area providing uniform air distribution.

Energy efficient, three phase 1750 RPM motors with drip-proof, grease lubricated ball bearings. Each motor is inherently overcurrent protected providing built-in protection against single phasing. All motors are factory wired with leads marked and terminated in a single weatherproof junction box on outside of the unit casing.

Fan guards are constructed of heavy gauge, close meshed, steel wire zinc plated and iridite dipped to minimize corrosion.

Convenient access panels are provided on each fan section for ease in maintaining fans.

Casing is constructed of heavy gauge aluminum, or galvanized steel.

Multiple fan sections, each powered by a separate motors, are separated by a full width baffle to prevent air bypass during fan cycling.

Motors are positioned within unit casing for weather protection. Adjustable base provides ease in belt tension adjustment.

Each fan is equipped with heavy duty pillow block ball bearings. Bearings are supplied with lubrication fittings shown. Fan shafts are polished steel, precision machined to assure smooth operation, minimum bearing wear. Shafts are coated with a corrosion resistant dressing.



Selection Formulas

Design Load (in BTUH) = GPM * (Ent. Fluid Temp. — Leaving Fluid Temp.) x (Fluid Constant Table 1)

T.D. = Entering Fluid Temperature — Entering Air Temperature

Base Capacity =
$$\frac{\text{Design Load (in BTUH)}}{1,000 \text{ x T.D. x Table 2 Factor x Table 4 Factor}} = \text{MBH/}^{\circ}\text{T.D.}$$

Capacity (Actual) = Capacity (Catalog) x 1,000 x T.D. x Table 2 Factor x Table 4 Factor

PD/F (Actual) = PD/F (Catalog) x Table 3 Factor

Selection Procedure

Given Conditions:

Belt Drive Unit — BFF 200 GPM 30% Ethylene Glycol Solution 90°F Ambient Air 140°F Entering Fluid Temp. 120°F Leaving Fluid Temp. 10 Ft. Water Max. P.D. Sea Level

Solution:

1. Calculate Design Load

A. Determine average fluid temperature for factor selection in Tables 2 and 3.

Average Fluid Temp. =
$$\frac{140 + 120}{2}$$
 = 130° F

B. Design Load = $200 \times (140-120) \times 470 = 1,880,000$

2. Calculate Base Capacity

A. Determine T.D. T.D. = 140-90 = 50°F

- B. Determine Capacity Correction from Table 2
 Capacity Correction Factor = 1.032
- C. Determine Altitude Correction from Table 4
 Altitude Correction Factor = 1.0

D. Base Capacity =
$$\frac{1,880,000}{1,000 \times 50 \times 1.032 \times 1.0} = 36.43$$

- Make selection from capacity tables using given conditions.
 Model BFF 096, capacity of 37.57 MBH/°T.D. meets the requirements with "C" circuiting.
- Convert pressure drop of selection to design condition P.D.
 1.1 x .950 = 5.8 ft. water pressure drop at design condition.
- 5. Calculate actual unit rating at design conditions 37.57 x 1,000 x 50 x 1.032 x 1.0 = 1,938,612 BTUH.

Fluid Cooler Correction Factor Tables

Table 1.

| | % | Fluid |
|-----------|--------|----------|
| | Glycol | Constant |
| | 0 | 500 |
| Fluid | 20 | 480 |
| Constants | 30 | 470 |
| | 40 | 450 |
| | 50 | 433 |

Table 2.

| | % | | Avera | ge Flui | id Tem _l | p. (°F) | |
|------------|--------|-------|-------|---------|---------------------|---------|-------|
| | Glycol | 90 | 100 | 110 | 120 | 130 | 140 |
| | 0 | 1.079 | 1.081 | 1.083 | 1.086 | 1.090 | 1.095 |
| Capacity | 20 | 1.030 | 1.035 | 1.042 | 1.047 | 1.054 | 1.058 |
| Correction | 30 | 1.005 | 1.009 | 1.012 | 1.023 | 1.032 | 1.034 |
| Factor | 40 | .928 | .943 | .960 | .984 | 1.000 | 1.010 |
| | 50 | .918 | .926 | .935 | .939 | .941 | .973 |

Table 3.

| | % | | Avera | ge Flui | id Tem _l | p. (°F) | |
|------------|--------|-------|-------|---------|---------------------|---------|-------|
| | Glycol | 90 | 100 | 110 | 120 | 130 | 140 |
| | 0 | .868 | .853 | .843 | .819 | .795 | .789 |
| Pressure | 20 | .980 | .959 | .935 | .915 | .893 | .866 |
| Drop | 30 | 1.055 | 1.025 | 1.000 | .975 | .950 | .923 |
| Correction | 40 | 1.120 | 1.080 | 1.060 | 1.034 | 1.000 | .974 |
| | 50 | 1.200 | 1.165 | 1.128 | 1.093 | 1.058 | 1.024 |

For average fluid temperatures below 90°F or above 140°F, contact the factory for special application.

Table 4. Altitude Correction Factors

| Altitude | _ |
|----------|--------|
| (Feet) | Factor |
| 0 | 1.000 |
| 500 | 0.993 |
| 1000 | 0.986 |
| 1500 | 0.974 |
| 2000 | 0.963 |
| 2500 | 0.953 |
| 3000 | 0.944 |
| 3500 | 0.935 |
| 4000 | 0.927 |
| 4500 | 0.919 |
| 5000 | 0.911 |
| 5500 | 0.903 |
| 6000 | 0.895 |
| 6500 | 0.887 |
| 7000 | 0.880 |

Capacity Ratings Belt Drive Fluid Coolers

Table 5A. MBH/°T.D. — 40% Glycol — Average Fluid Temperature 130°F (Sizes 045 - 062)

| | | | GPM TO | | | | | | | | | | | | | | | |
|------|-------|-------|--|-----|-------|-----|-------|-----|-------|------|-------|------|-------|------|-------|------|-------|------|
| BFF | Conn. | Coil | 30 |) | 4(|) | 5 | 0 | 6 |) | 70 |) | 80 |) | 90 | | 10 | 0 |
| Size | Loc. | Circ. | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF |
| | SE | Α | 10.90 | 3.3 | 13.11 | 5.4 | 14.57 | 8.0 | 15.82 | 11.0 | 16.82 | 14.3 | 17.64 | 18.1 | | | | |
| 045 | SE | В | | | | | 13.99 | 2.9 | 15.31 | 3.9 | 16.10 | 5.2 | 16.92 | 6.5 | 17.61 | 8.0 | 18.20 | 9.6 |
| | OE | С | | | | | | | | | | | 16.46 | 2.8 | 17.21 | 3.5 | 17.51 | 4.2 |
| | SE | Α | 11.40 | 3.3 | 13.93 | 5.4 | 15.65 | 8.0 | 17.14 | 11.0 | 18.34 | 14.4 | 19.34 | 18.2 | | | | |
| 050 | SE | В | | | | | 14.97 | 2.9 | 16.54 | 4.0 | 17.49 | 5.2 | 18.48 | 6.5 | 19.32 | 8.0 | 20.04 | 9.7 |
| | OE | С | | | | | | | | | | | 17.92 | 2.8 | 18.83 | 3.5 | 19.20 | 4.2 |
| | SE | Α | 11.67 | 3.3 | 14.35 | 5.4 | 16.47 | 8.0 | 17.83 | 11.0 | 19.15 | 14.4 | 20.23 | 18.2 | | | | |
| 054 | SE | В | | | | | 15.49 | 2.9 | 17.18 | 4.0 | 18.56 | 5.2 | 19.29 | 6.5 | 20.21 | 8.0 | 20.99 | 9.7 |
| | OE | С | | | | | | | | | | | 18.68 | 2.8 | 19.67 | 3.5 | 20.08 | 4.2 |
| | SE | Α | 11.60 | 3.3 | 14.30 | 5.4 | 16.46 | 8.0 | 17.90 | 11.0 | 19.30 | 14.4 | 20.47 | 18.2 | | | | |
| 057 | SE | В | | | | | 15.50 | 2.9 | 17.25 | 4.0 | 18.70 | 5.2 | 19.52 | 6.6 | 20.51 | 8.1 | 21.38 | 9.7 |
| | OE | С | | | | | | | | | | | 18.90 | 2.8 | 19.96 | 3.5 | 20.43 | 4.2 |
| | SE | Α | | | 14.89 | 3.4 | 17.24 | 5.1 | 19.11 | 7.0 | 20.27 | 9.2 | 21.44 | 11.6 | 22.40 | 14.2 | 23.21 | 17.1 |
| 059 | SE | В | | | | | | | | | 19.35 | 2.9 | 20.61 | 3.7 | 21.65 | 4.5 | 22.13 | 5.4 |
| | OE | С | | | | | | | | | | | | | | | 21.61 | 2.7 |
| | SE | Α | 11.92 | 3.3 | 14.83 | 5.4 | 17.22 | 8.0 | 18.83 | 11.0 | 20.40 | 14.5 | 21.73 | 18.3 | | | | |
| 062 | SE | В | | | | | 16.17 | 2.9 | 18.11 | 4.0 | 19.74 | 5.2 | 20.66 | 6.6 | 21.78 | 8.1 | 22.76 | 9.7 |
| | OE | С | | | | | | | | | | | 19.96 | 2.8 | 21.16 | 3.5 | 21.69 | 4.2 |

| | | | | | | | | | | GPM | | | | | | | | |
|------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-----|-----|-----|-----|
| BFF | Conn. | Coil | 120 | 0 | 14 | 0 | 16 | 0 | 18 | 0 | 20 | 0 | 25 | 0 | 30 | 0 | 35 | 0 |
| Size | Loc. | Circ. | MBH | PDF | MBH | PDF | MBH | PDF |
| 045 | SE | В | 19.14 | 13.3 | 19.86 | 17.4 | 20.43 | 22.0 | | | | | | | | | | |
| | OE | С | 18.48 | 5.7 | 19.24 | 7.5 | 19.85 | 9.5 | 20.34 | 11.7 | 20.75 | 14.1 | 21.53 | 20.9 | | | | |
| 050 | SE | В | 21.19 | 13.3 | 22.08 | 17.4 | 22.79 | 22.0 | | | | | | | | | | |
| | OE | С | 20.39 | 5.8 | 21.32 | 7.6 | 22.06 | 9.5 | 22.68 | 11.7 | 23.19 | 14.1 | 24.16 | 20.9 | | | | |
| 054 | SE | В | 22.25 | 13.3 | 23.22 | 17.4 | 23.99 | 22.0 | | | | | | | | | | |
| | OE | С | 21.37 | 5.8 | 22.38 | 7.6 | 23.20 | 9.6 | 23.86 | 11.8 | 24.42 | 14.1 | 25.47 | 20.9 | | | | |
| 057 | SE | В | 22.80 | 13.3 | 23.91 | 17.5 | 24.82 | 22.1 | | | | | | | | | | |
| | OE | С | 21.87 | 5.8 | 23.01 | 7.6 | 23.94 | 9.6 | 24.72 | 11.8 | 25.38 | 14.2 | 26.65 | 20.9 | | | | |
| 059 | SE | В | 23.45 | 7.5 | 24.46 | 9.8 | 25.24 | 12.4 | 25.87 | 15.2 | | | | | | | | |
| | OE | С | 23.06 | 3.7 | 23.72 | 4.8 | 24.54 | 6.1 | 25.21 | 7.4 | 25.76 | 9.0 | 26.79 | 13.2 | | | | |
| 062 | SE | В | 24.38 | 13.3 | 25.66 | 17.5 | 26.70 | 22.1 | | | | | | | | | | |
| | OE | С | 23.31 | 5.8 | 24.62 | 7.6 | 25.69 | 9.6 | 26.58 | 11.8 | 27.34 | 14.2 | 28.80 | 21.0 | | | | |

Connection Locations: SE = Same End OE = Opposite End

Capacity Ratings Belt Drive Fluid Coolers

Table 5B. MBH/°T.D. — 40% Glycol — Average Fluid Temperature 130°F (Sizes 065 - 114)

| | | | GPM Coil 30 40 50 60 70 80 90 100 | | | | | | | | | | | | | | | |
|------|----------------|--------|-----------------------------------|-----|-------|-----|--------|------------|-------|------|-------|-------------|----------------|-------------|----------------|-------------|-------|------|
| BFF | Conn. | Coil | 30 | | 40 | | 5 | 0 | | | 70 |) | 80 | | 90 |) | 10 | |
| Size | Loc. | Circ. | MBH | | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF |
| | SE | Α | 12.13 | 3.3 | 15.20 | 5.4 | 17.74 | 8.1 | 19.47 | 11.1 | 21.17 | 14.5 | 22.61 | 18.3 | | | | |
| 065 | SE | В | | | | | 16.63 | 2.9 | 18.80 | 4.0 | 20.45 | 5.2 | 21.45 | 6.6 | 22.66 | 8.1 | 23.72 | 9.7 |
| | ŌĒ | С | | | | | | | | | | | 20.69 | 2.9 | 21.98 | 3.5 | 22.56 | 4.2 |
| | OE | Α | | | 15.57 | 5.3 | 18.15 | 7.8 | 20.03 | 10.7 | 21.73 | 14.1 | 23.15 | 17.8 | 24.35 | 21.8 | | |
| 069 | SE | В | | | | | 17.61 | 4.1 | 19.71 | 5.7 | 21.47 | 7.4 | 22.60 | 9.3 | 23.80 | 11.5 | 24.83 | 13.8 |
| | OE | Ç | | | | | | | | | 20.52 | 3.2 | 22.00 | 4.0 | 23.27 | 4.9 | 23.97 | 5.9 |
| | SE SE | A | | | 15.76 | 3.5 | 18.69 | 5.1 | 20.99 | 7.0 | 22.59 | 9.2 | 24.21 | 11.6 | 25.60 | 14.3 | 26.80 | 17.2 |
| 073 | SE | В | | | | | | | | | 21.45 | 2.9 | 23.14 | 3.7 | 24.60 | 4.5 | 25.34 | 5.5 |
| | OE | C | | | | | | | | | | | | | | | 24.64 | 2.7 |
| l | OE | A | | | 16.53 | 5.3 | 19.62 | 7.9 | 21.97 | 10.8 | 24.12 | 14.1 | 25.96 | 17.9 | 27.54 | 21.9 | | |
| 081 | SE OE | В | | | | | 19.01 | 4.1 | 21.59 | 5.7 | 23.80 | 7.4 | 25.27 | 9.4 | 26.83 | 11.5 | 28.19 | 13.9 |
| | OF | C | | | | | | | | | 22.64 | 3.2 | 24.51 | 4.0 | 26.14 | 5.0 | 27.07 | 6.0 |
| | OE | A | | | 16.42 | 5.3 | 19.49 | 7.9 | 21.86 | 10.8 | 24.06 | 14.1 | 25.97 | 17.9 | 27.63 | 21.9 | ~~ ~= | 40.0 |
| 086 | SE | В | | | | | 18.90 | 4.1 | 21.50 | 5.7 | 23.75 | 7.4 | 25.30 | 9.4 | 26.93 | 11.5 | 28.37 | 13.9 |
| | OE | Ç | | | | | 40.40 | 0.0 | 00.04 | 0.0 | 22.62 | 3.2 | 24.55 | 4.0 | 26.25 | 5.0 | 27.26 | 6.0 |
| 088 | SE OE | A | | | | | 19.40 | 2.3 | 22.24 | 3.2 | 24.68 | 4.2 | 26.77 | 5.3 | 28.57 | 6.5 | 29.68 | 7.8 |
| | OE | В | | | | | 40.00 | 2.2 | 20.00 | 2.2 | 25.52 | 4.0 | 25.59 | 2.6 | 27.40 | 3.1 | 28.97 | 3.8 |
| 096 | SE OE | A | | | | | 19.82 | 2.3 | 22.86 | 3.2 | 25.52 | 4.2 | 27.83 | 5.3 | 29.86 | 6.5 | 31.17 | 7.8 |
| | OF | B A | | | 17.06 | 5.3 | 20.50 | 7.0 | 23.55 | 10.9 | 25.84 | 110 | 26.58 28.11 | 2.6 17.9 | 28.60 30.13 | 3.2 22.0 | 30.38 | 3.8 |
| 097 | OE SE | В | | | 17.06 | 5.3 | 19.89 | 7.9 4.1 | 22.86 | 5.7 | 25.49 | 14.2 7.5 | 27.34 | 9.4 | 29.30 | 11.6 | 31.05 | 13.9 |
| 097 | OE | C | | | | | 19.09 | 4.1 | 22.00 | 5.7 | 24.20 | 3.2 | 26.47 | 4.0 | 28.49 | 4.8 | 29.72 | 6.0 |
| | OE | A | | | | | 20.82 | 2.9 | 24.15 | 4.0 | 27.09 | 5.2 | 29.68 | 6.5 | 31.96 | 8.0 | 33.95 | 9.7 |
| 101 | SE | B | | | | | 20.02 | 2.9 | 24.13 | 4.0 | 26.26 | 2.9 | 28.82 | 3.7 | 31.09 | 4.6 | 33.08 | 5.5 |
| 101 | OE | Ç | | | | | | | | | 20.20 | 2.9 | 20.02 | 5.1 | 31.09 | 4.0 | 31.51 | 2.5 |
| | SE | Ā | | | | | 20.27 | 2.3 | 23.54 | 3.2 | 26.45 | 4.2 | 29.05 | 5.3 | 31.36 | 6.5 | 33.41 | 7.8 |
| 106 | OE | B | | | | | 20.21 | 2.5 | 25.54 | J.2 | 20.43 | 7.2 | 27.71 | 2.6 | 30.00 | 3.2 | 32.04 | 3.8 |
| | SE | A | | | | | 20.74 | 3.0 | 24.01 | 4.2 | 26.89 | 5.4 | 29.43 | 6.9 | 31.67 | 8.4 | 33.64 | 10.1 |
| 111 | ÖĒ | B | | | | | _0., - | 0.0 | | 1.2 | 25.87 | 2.6 | 28.39 | 3.3 | 30.61 | 4.1 | 32.58 | 4.9 |
| | OE | Ā | | | | | 21.23 | 2.9 | 24.78 | 4.0 | 27.98 | 5.2 | 30.87 | 6.6 | 33.46 | 8.1 | 35.77 | 9.7 |
| 114 | SE | B | | | | | | | | | 27.14 | 3.0 | 29.98 | 3.7 | 32.53 | 4.6 | 34.83 | 5.5 |
| | OE SE OE | Č | | | | | | | | | | 0.0 | | J | 5=.50 | | 33.11 | 2.5 |

| | | | | GPM | | | | | | | | | | | | | | |
|-------|----------|--------|----------------|------------|----------------|------------|----------------|------|----------------|----------|----------------|-------|-------|----------|-------|------|-------|------|
| BFF | Conn. | Coil | 120 | 0 | 14 | 0 | 16 | 0 | 18 | 80 | 20 | 0 | 25 | 0 | 30 | 0 | 35 | 0 |
| Size | Loc. | Circ. | MBH | PDF | MBH | | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF |
| 065 | SE | В | 25.48 | 13.4 | 26.87 | 17.5 | 28.00 | | | | | | | | | | | |
| 000 | OE | С | 24.32 | 5.8 | 25.73 | 7.6 | 26.89 | 9.6 | 27.86 | 11.8 | 28.68 | 14.2 | 30.27 | 21.0 | | | | |
| 069 | SE | В | 26.52 | 19.0 | | | | | | | | | | | | | | |
| 009 | OE | С | 25.67 | 8.1 | 27.00 | 10.7 | 28.08 | | 28.96 | | 29.70 | | | | | | | |
| 073 | SE | В | 27.29 | 7.5 | 28.84 | 9.8 | 30.08 | | 31.10 | | 31.95 | | | | | | | |
| 073 | OE | C | 26.74 | 3.8 | 27.77 | 4.8 | 29.05 | 6.1 | 30.10 | 7.5 | 30.99 | 9.0 | 32.70 | 13.3 | 33.91 | 18.3 | | |
| 081 | SE | В | 30.43 | 19.1 | | | | | | | | | | | | | | |
| 001 | OE | C | 29.31 | 8.2 | 31.08 | 10.7 | 32.53 | 13.5 | 33.72 | 16.6 | 34.72 | 20.0 | | | | | | |
| 086 | SE | В | 30.80 | 19.1 | 04.00 | 40 = | 00.04 | 40. | 04.50 | 40 - | 0==4 | | | | | | | |
| - 000 | OE | Č | 29.65 | 8.2 | 31.60 | 10.7 | 33.21 | 13.5 | 34.56 | 16.7 | 35.71 | 20.0 | | | | | | |
| 000 | SE | A | 32.09 | 10.7 | 00.00 | | 04.40 | | 05.70 | 40.5 | 00.74 | 40.7 | 00.07 | 400 | | | | |
| 088 | ŎE CE | В | 31.53 | 5.2 | 32.96 | 6.8 | 34.48 | | 35.72 | | 36.74 | | 38.67 | 18.8 | 20.57 | 40.5 | 20.07 | 40.4 |
| | SE | Č | 29.23 | 2.5 | 31.37 | 3.3 | 33.07 | 4.1 | 34.46 | 5.1 | 35.00 | 6.1 | 37.09 | 9.1 | 38.57 | 12.5 | 39.67 | 16.4 |
| 096 | SE OE | A | 33.98 | 10.7 | 25.05 | 6.0 | 26.07 | 0.6 | 20.27 | 10.6 | 20.62 | 10.7 | 42.02 | 18.8 | | | | |
| 096 | SE | B C | 33.34 30.77 | 5.2 2.5 | 35.05 33.23 | 6.8 3.3 | 36.87 35.24 | | 38.37 36.89 | | 39.63 37.57 | | 40.12 | 9.1 | 41.96 | 12.5 | 43.35 | 16.4 |
| | SE | В | 34.02 | 19.2 | 33.23 | ა.ა | 33.24 | 4.2 | 30.09 | 4.1 | 31.31 | 0.1 | 40.12 | 9.1 | 41.90 | 12.3 | 43.33 | 10.4 |
| 097 | OE | C | 32.62 | 8.2 | 35.01 | 10.8 | 37.00 | 13.6 | 38.68 | 16.7 | 40.11 | 20.1 | | | | | | |
| | OE | Ā | 36.73 | 13.3 | 33.01 | 10.0 | 37.00 | 13.0 | 30.00 | 10.7 | 40.11 | 20.1 | | | | | | |
| 101 | SE | В | 36.41 | 7.6 | 38.44 | 9.9 | 40.49 | 12.5 | 42.18 | 15.3 | 43.59 | 18 / | | | | | | |
| 101 | OE | Č | 34.88 | 3.4 | 37.56 | 4.5 | 39.14 | 5.6 | 40.85 | | 42.30 | | 45.06 | 12.3 | 47.01 | 16.9 | | |
| | SE | Ă | 36.23 | 10.8 | 38.94 | 14.1 | 41.16 | | 43.01 | 21.9 | 12.00 | 0.0 | 10.00 | 12.0 | 17.01 | 10.0 | | |
| 106 | ŎĒ | B | 35.51 | 5.2 | 37.61 | 6.8 | 39.83 | | 41.69 | | 43.28 | `12.7 | 36.36 | 18.8 | | | | |
| 100 | ŠĒ | Č | 32.60 | 2.5 | 35.50 | 3.3 | 37.91 | 4.2 | 39.93 | | 40.80 | | 44.01 | 9.1 | 46.37 | 12.5 | 48.19 | 16.4 |
| | SE | Ä | 36.46 | 13.9 | 00.00 | 0.0 | 01.01 | | 00.00 | <u> </u> | 10100 | 0 | | <u> </u> | | | | |
| 111 | ŌĒ | В | 35.89 | 6.7 | 38.00 | 8.8 | 40.08 | 11.1 | 41.81 | 13.7 | 43.27 | 16.4 | | | | | | |
| | SE | Ċ | 33.60 | 3.2 | 36.34 | 4.2 | 38.57 | | 40.44 | | 41.37 | 7.9 | 44.28 | 11.6 | 46.39 | 16.0 | | |
| | OE | A | 39.72 | 13.3 | 42.22 | 17.4 | 44.77 | 22.0 | | | | | | | | | | |
| 114 | SE | В | 38.75 | 7.6 | 41.26 | 9.9 | 43.80 | 12.5 | 45.92 | 15.4 | 47.73 | 18.5 | | | | | | |
| | OE | С | 37.03 | 3.4 | 40.24 | 4.5 | 42.21 | 5.6 | 44.34 | 6.9 | 46.16 | 8.3 | 49.72 | 12.3 | 52.29 | 17.0 | | |

Connection Locations: SE = Same End OE = Opposite End

Capacity Ratings Belt Drive Fluid Coolers

Table 5C. MBH/°T.D. — 40% Glycol — Average Fluid Temperature 130°F (Sizes 121 - 228)

| | | | GPM 30 40 50 60 70 80 90 100 | | | | | | | | | | | | | | | |
|------|--|------------------|------------------------------|-----|-------|-----|----------------|------------|----------------|------------|-------------------------|-------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|----------------------------|
| BFF | Conn. | Coil | 30 | | | | | | 60 |) | | | | | | | | |
| Size | Loc. | Circ. | MBH | PDF | MBH | PDF | MBH | | MBH | | MBH | | MBH | PDF | MBH | | MBH | PDF |
| 121 | SE OE | A B | | | | | 21.04 | 3.0 | 24.45 | 4.2 | 27.52 26.47 | 5.4 2.6 | 30.25 29.18 | 6.9 3.3 | 32.70 31.59 | 8.5 4.1 | 34.87 33.75 | 10.2 4.9 |
| 136 | SE OE OE SE OE SE OE SE OE SE OE | B A B C | | | | | 22.54 | 3.7 | 26.64 26.08 | 5.2 2.9 | 30.50 29.86 | 6.8 3.8 | 34.09 33.37 | 8.6 4.9 | 37.41 36.61 | 10.6 6.0 | 40.45 39.60 37.98 | 4.9 12.7 7.2 3.2 |
| 139 | SE OE | A B | | | | | 21.44 | 3.0 | 25.07 | 4.2 | 28.40 27.34 | 5.5 2.6 | 31.42 30.31 | 6.9 3.3 | 34.17 33.00 | 8.5 4.1 | 36.66 35.45 | 10.2 4.9 |
| 145 | SE OE SE | A B C | | | | | 22.21 | 3.7 | 26.11 | 5.1 | 29.72 28.82 | 6.7 3.2 | 33.02 32.05 | 8.5 4.1 | 36.03 35.00 | 10.4 5.0 | 38.76 37.67 35.14 | 12.6 6.0 2.9 12.7 |
| 151 | OE SE OE | A B C | | | | | 22.71 | 3.8 | 26.94 26.41 | 5.2 2.9 | 30.97 30.36 | 6.8 3.9 | 34.77 34.08 | 8.6 4.9 | 38.35 37.57 | 10.6 6.0 | 41.68 40.83 39.19 | 7.2 |
| 159 | SE OE SE OE SE OE SE OE | A B C | | | | | 22.38 | 3.7 | 26.40 | 5.1 | 30.15 29.28 | 6.7 3.2 | 33.63 32.67 | 8.5 4.1 | 36.84 35.81 | 10.5 5.0 | 39.79 38.68 36.07 | 12.6 6.1 2.9 |
| 167 | SE OE SE | A B C | | | 18.30 | 3.0 | 22.62 | 4.4 | 26.72 26.08 | 6.1 2.9 | 30.57 29.85 | 8.0 3.8 | 34.14 33.34 | 10.1 4.8 | 37.44 36.57 34.35 | 12.4 6.0 2.8 | 40.47 39.54 37.27 | 14.9 7.2 3.4 |
| 179 | SE OE SE | A B C | | | | | 22.57 | 3.7 | 26.71 | 5.1 | 30.63 29.79 | 6.7 3.2 | 34.32 33.39 | 8.5 4.1 | 37.77 36.74 | 10.5 5.0 | 40.98 39.87 37.19 | 12.6 6.1 2.9 |
| 182 | SE | A B C | | | 18.36 | 3.0 | 22.74 | 4.4 | 26.93 26.33 | 6.1 2.9 | 30.90 30.21 | 8.0 3.8 | 34.62 33.85 | 10.1 4.9 | 38.10 37.24 35.02 | 12.4 6.0 2.8 | 41.32 40.39 38.10 | 15.0 7.2 3.4 |
| 200 | OE SE OE | A B C | | | 18.65 | 3.7 | 23.24 23.07 | 5.5 3.1 | 27.76 27.53 | 7.6 4.3 | 32.16 31.87 31.12 | 9.9 5.6 2.5 | 36.42 36.06 35.21 | 12.6 7.1 3.2 | 40.52 40.08 39.12 | 15.5 8.8 3.9 | 44.42 43.90 42.84 | 18.7 10.6 4.7 |
| 209 | SE OE SE OE SE OE | A B C | | | 18.43 | 3.0 | 22.88 | 4.4 | 27.16 26.60 | 6.1 2.9 | 31.26 30.62 | 8.0 3.8 | 35.16 34.42 | 10.1 4.9 | 38.84 38.00 35.79 | 12.4 6.0 2.8 | 42.29 41.37 39.06 | 15.0 7.2 3.4 |
| 228 | OE SE OE | A B C | | | 18.67 | 3.7 | 23.29 23.14 | 5.5 3.1 | 27.85 27.66 | 7.6 4.3 | 32.33 32.08 | 9.9 5.6 | 36.69 36.38 35.60 | 12.6 7.1 3.2 | 40.93 40.54 39.65 | 15.5 8.8 3.9 | 45.02 44.55 43.55 | 18.7 10.6 4.7 |

| | | | | | | | | | | GPM | | | | | | | | |
|------|--|-------------|-------------------------|--------------------|-------------------------|-------------|----------------|-------------|----------------|-------------|----------------|------|-------|------|-------|------|-------|------|
| BFF | Conn. | Coil | 120 |) | 14 | 0 | 16 | 0 | 18 | | 20 | 0 | 25 | 0 | 30 | 0 | 35 | 0 |
| Size | Loc. | Circ. | MBH | | MBH | PDF | MBH | PDF | MBH | PDF | MBH | PDF | MBH | | MBH | PDF | MBH | PDF |
| 121 | SE OE SE | A B C | 38.05 37.43 34.95 | 14.0 6.7 3.2 | 39.84 38.01 | 8.8 4.2 | 42.22 40.54 | 11.1 5.3 | 44.22 42.67 | 13.7 6.5 | 45.92 43.78 | | 47 17 | 11 6 | 49 67 | 16.0 | | |
| 136 | ÖE SE OE | A B C | 45.24 44.84 43.12 | 17.5 9.9 4.4 | 48.56 47.45 | 13.0 5.8 | 52.10 51.10 | | | 20.1 | 55.89 | 10.8 | 60.84 | 16.0 | 10.01 | | | |
| 139 | SE OE SE SE | A B C | 40.42 39.72 36.98 | | 43.89 42.64 40.55 | 18.3 8.9 | 45.52 43.57 | 11.2 | 47.98 46.16 | 13.7 | 50.11 47.57 | 16.5 | 51 82 | | 55 02 | 16.0 | 57 51 | 21.0 |
| 145 | SE OE SE | Ă B C | 42.97 42.39 39.75 | 17.3 8.3 3.9 | 45.57 43.59 | 10.9 5.2 | 48.64 46.80 | 13.7 | 51.23 49.52 | 16.9 | | 20.3 | 55.41 | | 00.02 | 19.5 | 01.01 | 21.0 |
| 151 | OE SE OE SE OE SE OE SE | A B C | 47.11 46.69 44.90 | 17.5 9.9 4.4 | 51.03 49.82 | | 55.20 54.09 | | 58.81 56.85 | 20.2 | 59.93 | 10.9 | | | 70 69 | 22.0 | | |
| 159 | SE OE SE | A B C | 44.45 43.76 41.07 | 17.3 8.3 3.9 | 47.42 45.29 | 10.9 5.2 | 50.89 48.88 | 13.8 | 53.86 51.96 | 16.9 8.0 | 53.80 | | 58.84 | | 62.59 | 19.6 | | |
| 167 | OE SE | B C | 44.77 43.42 | 9.9 4.7 | 48.67 46.78 | 12.9 6.1 | 52.28 50.49 | 16.3 7.7 | 55.37 53.67 | 20.0 9.5 | 55.70 | 11.4 | 60.92 | 16.8 | 64.78 | 23.1 | | |
| 179 | SE OE SE SE | A B C | 46.20 45.48 42.65 | 17.3 8.3 4.0 | 49.67 47.37 | 10.9 5.2 | 53.68 51.47 | | 57.16 55.05 | 16.9 8.0 | 60.21 57.26 | | 63.31 | | 67.91 | 19.6 | | |
| 182 | OE SE | A B C | 46.65 46.03 43.60 | 20.6 9.9 4.7 | 50.32 48.33 | 12.9 6.1 | 54.33 52.42 | | 57.80 55.97 | 20.1 9.5 | 58.29 | 11.4 | 64.25 | 16.8 | 68.74 | 23.1 | | |
| 200 | OE SE OF | A B C | 51.29 50.98 49.70 | | 56.78 55.81 | 19.0 8.5 | 61.22 | 10.7 | 65.25 | 13.2 | | | 77.54 | 23.4 | | | | |
| 209 | SE OE SE | A B C | 48.12 47.49 45.00 | 20.6 9.9 4.7 | 52.29 50.20 | 13.0 6.1 | 56.82 54.76 | | 60.79 58.79 | | 61.51 | 11.4 | 68.49 | 16.9 | | | | |
| 228 | SE OE | B C | 52.08 50.85 | 14.6 6.5 | 58.44 57.48 | 19.1 8.5 | 63.47 | 10.8 | 68.10 | 13.2 | 72.77 | 15.9 | 82.50 | 23.4 | | | | |

Connection Locations:

SE = Same End

OE = Opposite End

Optional Accessories

Optional Cooling Coils

The standard coil construction and fin pattern is compatible with most system environments. Where the fluid cooler is subject to a contaminated or corrosive airstream, special coils may be required. Available for these applications are coils with wider fin spacing for easier cleaning, coils Heresite® coated to reduce corrosion (up through 169" long cabinet), polyester painted fins for salt atmosphere protection (BOHNGUARD®), and copper fin/copper tube coils for all models.

Extended Lube Lines

Available on belt drive units, extended lube lines are factory installed with external grease fittings to make lubrication routine.

Connection Manifold Kit

This field installed kit converts the standard dual circuit cooler (direct drive models and belt drive models) to one having a single inlet and outlet connection.

Sealtite Wiring

Sealtite wiring is watertight, flexible conduit and fittings for fan motors. It is factory installed and replaces the standard THW wiring.

Low Ambient Operation

Fan Control

Fan control is an automatic operation to control the leaving fluid temperature by cycling fans off in sequence. Each fan section, with the exception of the number one cell, operates under the control of an individual thermostat which senses leaving fluid temperature. As the fluid temperature drops below the set point of each thermostat, that fan section cycles off. The number one fan section remains on at the full fan cycling. Cooler capacity drops to the approximate capacity percentages shown in the table below.

NOTE: The standard fan control packages use individual thermostats to cycle fans. This method of control will allow leaving fluid temperatures to fluctuate between fan cycling points. For applications requiring precise fluid temperature control during all periods of operation, contact the factory applications department.

Multiple Contactor Fan Cycling:

Consists of a factory mounted and wired, weatherproofed enclosure containing starting contactors (with holding coils) and thermostat(s) with sensing bulb strapped to coil outlet header. Specify control voltage on order: 24V, 115V or 208-230V available.

The fan control thermostats must be field adjusted to meet design requirements. The maximum temperature setting for the standard control thermostat is 100°F. For applications requiring precise fluid temperature control during all periods of operation, contact the factory applications department.

Table 6. Capacity at Maximum Fan Control

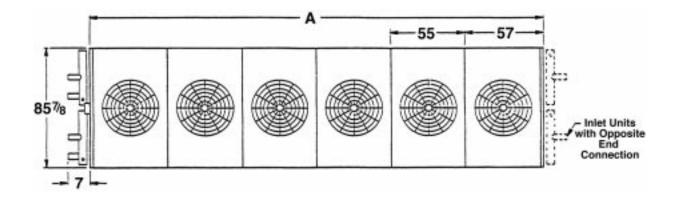
| One Fan Cell Operating | | | | | | | | | |
|------------------------|----------|--|--|--|--|--|--|--|--|
| Fans | % Total | | | | | | | | |
| Available | Capacity | | | | | | | | |
| 2 | 55% | | | | | | | | |
| 3 | 40% | | | | | | | | |
| 4 | 33% | | | | | | | | |
| 5 | 28% | | | | | | | | |
| 6 | 25% | | | | | | | | |

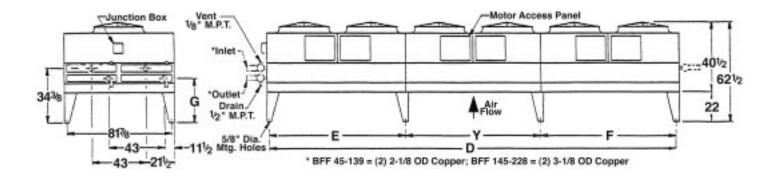
Table 7. Belt Drive Fluid Cooler Volume in Gallons

| BFF Unit | Volume Gallons | BFF Unit | Volume Gallons | BFF Unit | Volume Gallons |
|-------------|-------------------|-------------|-------------------|-------------|-------------------|
| 045 | 19.3 | 086 | 26.3 | 139 | 43.1 |
| 050 | 19.3 | 088 | 33.7 | 145 | 52.5 |
| 054 | 19.3 | 096 | 33.7 | 151 | 52.9 |
| 057 | 19.3 | 097 | 26.3 | 159 | 52.5 |
| 059 | 24.3 | 101 | 41.1 | 167 | 62.0 |
| 062 | 19.3 | 106 | 26.3 | 179 | 52.5 |
| 065 | 19.3 | 111 | 43.1 | 182 | 62.0 |
| 069 | 26.3 | 114 | 41.1 | 200 | 76.4 |
| 073 | 24.3 | 121 | 43.1 | 209 | 62.0 |
| 081 | 26.3 | 136 | 52.9 | 228 | 76.4 |

Physical / Dimensional Data

Diagram 1.Dimensional Diagram for models BFF 45-228





Dimensional and Physical Data

Table 8A. Dimensions

| BFF | | | | | | D | imensio | ns | | | | | | 48" Fa | ns |
|------|-----|-----|---------------------------------|---------------------------------|---------------------------------|---|----------------------------------|---------------------------------|--|---------------------------------|--|-------|------|--------|---------|
| Size | Α | D | Е | F | G | J | K | L | M | R | S | Υ | Qty. | RPM | CFM |
| 045 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 2 | 415 | 32,800 |
| 050 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 6 ¹ / ₂ | 1 ¹⁵ / ₁₆ | | 2 | 470 | 35,000 |
| 054 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 2 | 470 | 34,400 |
| 057 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 2 | 600 | 51,200 |
| 059 | 114 | 110 | | | 301/4 | 225/8 | 237/16 | 3913/16 | 35 ¹³ / ₁₆ | 6 ¹ / ₂ | 1 ¹⁵ / ₁₆ | | 2 | 470 | 31,200 |
| 062 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 2 | 600 | 50,100 |
| 065 | 114 | 110 | | | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 41 ⁷ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 2 | 600 | 48,200 |
| 069 | 169 | 165 | 82 | 83 | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 39 ¹³ / ₁₆ | 6 ¹ / ₂ | 1 ¹⁵ / ₁₆ | | 3 | 415 | 44,000 |
| 073 | 114 | 110 | | | 301/4 | 225/8 | 237/16 | 3913/16 | 35 ¹³ / ₁₆ | 61/2 | 1 15/16 | | 2 | 600 | 49,200 |
| 081 | 169 | 165 | 82 | 83 | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 39 ¹³ / ₁₆ | 61/2 | 1 ¹⁵ / ₁₆ | | 3 | 470 | 51,600 |
| 086 | 169 | 165 | 82 | 83 | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 39 ¹³ / ₁₆ | 6 ¹ / ₂ | 1 ¹⁵ / ₁₆ | | 3 | 600 | 76,800 |
| 088 | 169 | 165 | 82 | 83 | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 61/2 | 1 ¹⁵ / ₁₆ | | 3 | 470 | 46,800 |
| 096 | 169 | 165 | 82 | 83 | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 61/2 | 1 ¹⁵ / ₁₆ | | 3 | 545 | 54,300 |
| 097 | 169 | 165 | 82 | 83 | 315/8 | 21 ¹³ / ₁₆ | 237/16 | 41 ⁷ / ₁₆ | 39 ¹³ / ₁₆ | 6 ¹ / ₂ | 1 ¹⁵ / ₁₆ | | 3 | 600 | 72,300 |
| 101 | 169 | 165 | 82 | 83 | 287/8 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 27/16 | | 3 | 545 | 58,800 |
| 106 | 169 | 165 | 82 | 83 | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 61/2 | 1 15/16 | | 3 | 600 | 66,000 |
| 111 | 224 | 220 | 109 ¹ / ₂ | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 42 ¹ / ₄ | 42 ¹ / ₄ | 6 ¹¹ / ₁₆ | 2 ³ / ₁₆ | | 4 | 470 | 72,000 |
| 114 | 169 | 165 | 82 | 83 | 287/8 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 27/16 | | 3 | 600 | 67,600 |
| 121 | 224 | 220 | 1091/2 | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 611/16 | 23/16 | | 4 | 545 | 78,000 |
| 136 | 224 | 220 | 109 ¹ / ₂ | 110 ¹ / ₂ | 287/8 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 42 ¹ / ₄ | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 2 ⁷ / ₁₆ | | 4 | 545 | 82,400 |
| 139 | 224 | 220 | 109 ¹ / ₂ | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 42 ¹ / ₄ | 611/16 | 23/16 | | 4 | 600 | 99,200 |
| 145 | 279 | 275 | 821/2 | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 27/16 | 821/2 | 5 | 470 | 81,500 |
| 151 | 224 | 220 | 109 ¹ / ₂ | 110 ¹ / ₂ | 287/8 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 2 ⁷ / ₁₆ | | 4 | 600 | 100,400 |
| 159 | 279 | 275 | 821/2 | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 2 ⁷ / ₁₆ | 821/2 | 5 | 545 | 94,000 |
| 167 | 334 | 330 | 109 ¹ / ₂ | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 421/4 | 6 ¹⁵ / ₁₆ | 27/16 | 110 | 6 | 470 | 101,400 |
| 179 | 279 | 275 | 821/2 | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 2 ⁷ / ₁₆ | 821/2 | 5 | 600 | 114,500 |
| 182 | 334 | 330 | 1091/2 | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 27/16 | 110 | 6 | 545 | 117,000 |
| 200 | 334 | 330 | 1091/2 | 110 ¹ / ₂ | 29 ⁹ / ₁₆ | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 27/16 | 110 | 6 | 545 | 123,600 |
| 209 | 334 | 330 | 109 ¹ / ₂ | 110 ¹ / ₂ | 301/4 | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 42 ¹ / ₄ | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 2 ⁷ / ₁₆ | 110 | 6 | 600 | 142,200 |
| 228 | 334 | 330 | 1091/2 | 110 ¹ / ₂ | 29 ⁹ / ₁₆ | 21 ¹³ / ₁₆ | 21 ¹³ / ₁₆ | 421/4 | 42 ¹ / ₄ | 6 ¹⁵ / ₁₆ | 27/16 | 110 | 6 | 600 | 150,600 |

Table 8B. Physical Data

| | | Motor | S | | Internal | Approximate | |
|------|--------------------------------------|---------|----------------|--------|------------|-------------|--|
| BFF | | Full Lo | oad Amps (Thre | Volume | Dry Weight | | |
| Size | HP | 208V | 230V | 460V | Gallons | (Lbs.) | |
| 045 | 1 ¹ / ₂ | 11.0 | 10.0 | 5.0 | 19.3 | 1280 | |
| 050 | 2 | 13.4 | 13.2 | 6.6 | 19.3 | 1340 | |
| 054 | 2 | 13.4 | 13.2 | 6.6 | 19.3 | 1380 | |
| 057 | 5 | 29.2 | 26.4 | 13.2 | 19.3 | 1370 | |
| 059 | 2 | 13.4 | 13.2 | 6.6 | 24.3 | 1540 | |
| 062 | 5 | 29.2 | 26.4 | 13.2 | 19.3 | 1420 | |
| 065 | 5 | 29.2 | 26.4 | 13.2 | 19.3 | 1450 | |
| 069 | 11/2 | 16.5 | 15.0 | 7.5 | 26.3 | 1960 | |
| 073 | 5 | 29.2 | 26.4 | 13.2 | 24.3 | 1610 | |
| 081 | 2 | 20.1 | 19.8 | 9.9 | 26.3 | 2110 | |
| 086 | 5 | 43.8 | 39.6 | 19.8 | 26.3 | 2095 | |
| 088 | 2 | 20.1 | 19.8 | 9.9 | 33.7 | 2335 | |
| 096 | 3 | 27.9 | 25.2 | 12.6 | 33.7 | 2380 | |
| 097 | 5 | 43.8 | 39.6 | 19.8 | 26.3 | 2395 | |
| 101 | 3 | 27.9 | 25.2 | 12.6 | 41.1 | 2460 | |
| 106 | 5 | 43.8 | 39.6 | 19.8 | 26.3 | 2440 | |
| 111 | 2 | 26.8 | 26.4 | 13.2 | 43.1 | 2910 | |
| 114 | 5 | 43.8 | 39.6 | 19.8 | 41.1 | 2580 | |
| 121 | 3 | 37.2 | 33.6 | 16.8 | 43.1 | 2970 | |
| 136 | 3 | 37.2 | 33.6 | 16.8 | 52.9 | 3370 | |
| 139 | 5 | 58.4 | 52.8 | 26.4 | 43.1 | 3050 | |
| 145 | 2 | 33.5 | 33.0 | 16.5 | 52.5 | 3850 | |
| 151 | 5 | 58.4 | 52.8 | 26.4 | 52.9 | 3450 | |
| 159 | 3 | 46.5 | 42.0 | 21.0 | 52.5 | 3900 | |
| 167 | 2 | 40.2 | 39.6 | 19.8 | 62.0 | 4525 | |
| 179 | 5 | 73.0 | 66.0 | 33.0 | 52.5 | 3950 | |
| 182 | 3 | 55.8 | 50.4 | 25.2 | 62.0 | 4575 | |
| 200 | 3 | 55.8 | 50.4 | 25.2 | 76.4 | 4995 | |
| 209 | 5 | 87.6 | 79.2 | 39.6 | 62.0 | 4695 | |
| 228 | 5 | 87.6 | 79.2 | 39.6 | 76.4 | 5115 | |

Engineering Specifications

Unit Cabinet -

Casings shall be constructed of heavy gauge corrosion resistant aluminum, or galvanized steel, thoroughly reinforced with bolted gussets. Full width baffles shall divide the individual fan sections. Motor access panels shall be provided in each fan section. Cabinet mounting frames and mounting legs shall be constructed of heavy galvanized steel. The legs shall be shipped with the unit for field installations.

Coil -

Coil shall be constructed of plate type, die formed, aluminum fins mechanically bonded to copper tubes; fins shall employ full height, self-spacing collars which completely cover tube surface. Coil shall be pressure and leak tested at 425 PSIG air under warm water, evacuated, dehydrated and sealed with caps on connections.

Fans -

Fans, each driven by its own motor, shall be selected to cover a large percentage of the coil face area. Fans shall be statically and dynamically balanced before shipment. Low tip speeds shall provide quiet operation.

Drives & Bearings -

Each fan shall be equipped with a heavy duty, weather protected, pillow block bearing with lubricating fitting accessible through the motor access panel. Fan shafts shall be polished steel, precision machined and coated with corrosion resistant dressing. V-belt and cast iron drive pulleys shall be matched for heavy duty continuous operation.

Fan Motors -

Motors shall be NEMA type "T" frame, open drop-proof with grease lubricated ball bearings. They shall be thermally protected against burnout, and may be started by a single contactor. Motors shall be factory wired with leads marked and terminated in a weatherproof junction box located on the outside of the unit. They shall be positioned within unit casing for weather protection. Adjustable motor mount bases and large, easy access motor compartment panels. Available in 208V, 230V, 460V and 575V, three phase 60 Hz. models: and 200V, 380V and 415V, three phase 50 Hz. models.

Fan Guards -

Guards shall be constructed of heavy gauge, close meshed steel wire that is zinc plated and iridite dipped to prevent corrosion.

U.L. Listing -

All 60 Hz. models (except 575V) shall be U.L. listed.





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